Final Clean Air Fine Particle Implementation Rule

EPA Office of Air Quality Planning and Standards

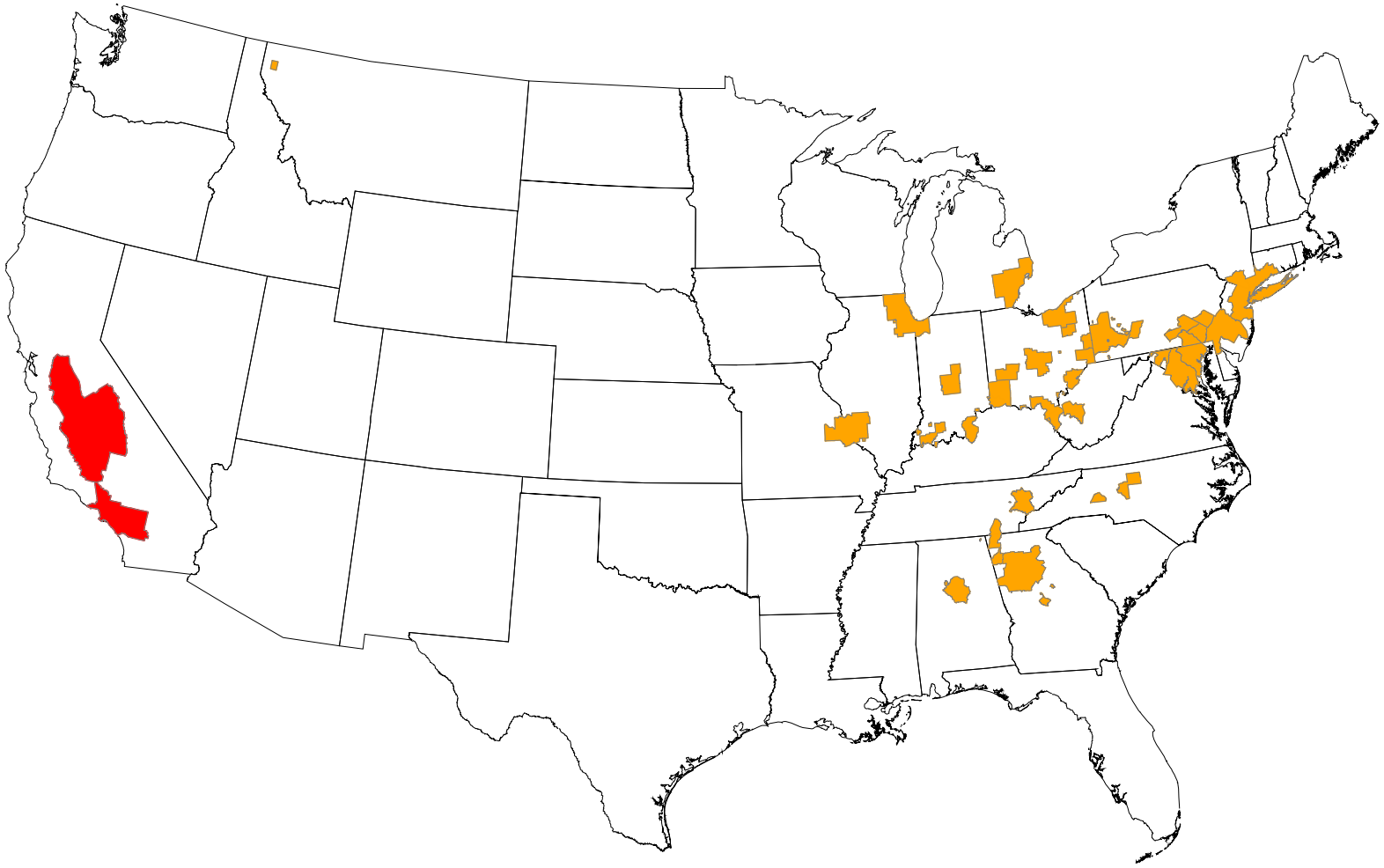
May 2007

Timeline for PM2.5 NAAQS Implementation

April 2005	39 areas designated for 1997 standards
Dec. 2006	2006 revised PM NAAQS
Dec. 2007	States recommend designations for 2006 revised PM2.5 standards
April 2008	PM2.5 State plans due for 1997 standards
2008-9	Final designations for 2006 PM2.5 standards (effective date 60-90 days later; 2009-10)
Apr 2010-15	Attainment date for areas designated in 2005 for 1997 standards
April 2012-13	PM2.5 State plans due for 2006 standards
April 2014-20	Attainment date for areas designated in 2009-10

Currently Designated $PM_{2.5}$ Nonattainment Areas - 1997 Standards

Violated annual and/or 24-hour $PM_{2.5}$ standards with designated data (2001-2003*)



Legend

Nonattainment areas violating:	**Number of Areas**
both annual (15 µg/m^3) and 24-hour (65 µg/m^3) standards	2
ONLY the 24-hour standard (65 µg/m^3)	0
ONLY the annual standard (15 µg/m^3)	37
Total $PM_{2.5}$ Nonattainment Areas	**39**

* 2002-2004 data were considered in the designation process but all nonattainment designations were based on 2001-2003 data

Pollutants to Address in Attainment Plans

- Direct PM2.5 and SO2: must be evaluated for control measures in each area
- NOx: Sources of NOx must be evaluated for control measures in each area, unless the State and EPA provide a technical demonstration showing that NOx emissions from sources in the State do not significantly contribute to PM2.5 concentrations in a specific area
- VOC: Sources of VOC are not required to be evaluated for control measures in each area, unless the State or EPA provide a technical demonstration showing that VOC emissions from sources in the State significantly contribute to PM2.5 concentrations in a specific area
- Ammonia: Sources of ammonia are not required to be evaluated for control measures in each area, unless the State or EPA provide a technical demonstration showing that ammonia emissions from sources in the State significantly contribute to PM2.5 concentrations in a specific area
- Rule provides basic guidance on potential analyses for technical demonstration; weight of evidence approach.

State Implementation Plan (SIP) Due Dates and Attainment Dates

- SIP revisions are due April 2008
  - Account for significant air quality improvement from regional/national rules (e.g. CAIR, diesel rules) and State rules on the books
  - Evaluate controls for local and in-state contributors to the problem
  - Adopt reasonably available measures to attain “as expeditiously as practicable” as required by the Clean Air Act (CAA)
  - Include enforceable emissions limitations and source testing & monitoring procedures as required by the CAA
- Attainment date is no later than five years from date of designation (e.g. Apr. 2010)
  - Extensions of 1-5 years are possible, considering:
    - the severity of the nonattainment problem
    - availability and feasibility of air pollution control measures
- Areas evaluated based on most recent 3 years of monitoring data (e.g. 2007-9 for April 2010 attainment date)
- No classification system

Reasonably Available Control Technology (RACT) / Reasonably Available Control Measures (RACM)

- For nonattainment areas, States need to adopt all reasonably available control measures (including RACT) needed to attain the standards as expeditiously as practicable and meet Rate of Further Progress requirements
  - Collective analysis; demonstrate that no reasonably available additional measures would advance the attainment date by at least 1 year
- Guidance in rule
  - Identify technically and economically feasible measures
  - Conduct air quality modeling
  - Select RACT/RACM
- Area-specific flexibility
  - No tonnage threshold; evaluate smaller sources for areas with more severe problem
  - Limited analysis without modeling if have projected design value of 14.5 ug/m3 of PM2.5 by 2007-2009
- Preamble includes list of specific measures that States should consider as a starting point for RACT/RACM assessment

RACT/RACM
for Sulfur Dioxide (SO2) and Nitrogen Oxides (NOx) from Electric Generating Units (EGUs)

- Presumption
  - SO2: If State meets the Clean Air Interstate Rule (CAIR) SO2 cap through EGU reductions only, then the State may presume that its nonattainment area EGUs meet RACT and RACM
  - NOx: If State meets CAIR NOx cap through EGU reductions only, then the State may presume that its nonattainment area EGUs meet RACT and RACM (provided NOx sources with SCR operate it year-round)
- A State may impose additional requirements on a specific plant if the State determines it is a reasonable means to attain expeditiously
  - However, several factors should be considered re: potential disbenefits of beyond-CAIR controls
  - Addressed case-by-case through SIP development process
- Direct PM2.5 RACT/RACM required for all EGUs

Reasonable Further Progress (RFP)

- RFP: annual incremental reductions in emissions for purpose of ensuring timely attainment
- RFP plan due with attainment demonstration in 2008
  - If attainment date is no later than 5 years from designations (up to April 2010), RFP is met by attainment demo
  - For areas with an attainment date extension, the State must establish emission reduction milestones showing “generally linear” progress from 2002 through the 2009 emissions year and, if appropriate, the 2012 emissions year
  - Alternate approach is possible if it would achieve equivalent air quality improvement
- Geographic range of SO2 and NOx emission sources included in RFP plan could extend up to 200 km beyond nonattainment area boundary.
- Mid-course review in 2011 for area with 2014 or 2015 attainment date
  - Adopt new strategies as necessary

Contingency Measures

- To be implemented without further action if area fails to attain by its attainment date or fails to meet RFP requirements.
- Need to be measures other than those required for attainment or to meet RFP
- Level of reductions: one year's worth of reductions needed for attainment in the area

Condensable Particulate Matter

- PM is comprised of filterable and condensable emissions. Condensable emissions are a significant percentage of direct PM2.5 emissions from some sources.
- Emission inventories have been required to include condensable PM for a number of years
- Test methods for condensable PM are available but concerns remain about data uncertainties and ability to develop enforceable emission limits for many sources in a short period of time.
- For sources included in PM2.5 attainment plans, emissions limits including condensable PM are required after January 2011.
  - EPA encourages States that already have required emissions testing and established emission limits for condensable PM to continue
- Transition period activities
  - EPA to update Method 201A & 202 for use by States during and following transition
  - Stakeholder groups to conduct testing with updated Method 201A & 202 to update emissions factors
  - EPA to work with ASTM to finalize dilution-based test method
  - States to enhance databases to support regulations

Other Issues

- Improved source monitoring
- Transportation conformity
- General conformity
- Emission inventories
- Enforcement and compliance
- NSR addressed in a separate rulemaking